

GLOBAL CLIMATE HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF MAY 22, 1993

1. Hawaii:

MORE DRY WEATHER.

As much as 75 mm of rain fell on the Big Island, but little or no precipitation was reported elsewhere. Since the beginning of the year, totals ranged from 15% to 60% of normal [14 weeks].

2. Western North America:

UNUSUALLY MILD CONDITIONS RETURN.

Temperatures averaged 4°C to 7°C above normal across most of Alaska, western Canada, and the Pacific Coast of the United States [6 weeks].

3. West-Central North America:

WET SPELL ENDS.

Although as much as 50 mm of precipitation fell from isolated showers, most of the region received only 20 to 30 mm [Ended at 8 weeks].

4. Great Plains:

PERSISTENT RAINS EXACERBATE FLOODING.

Thundershowers dumped 50 mm of rain in just two hours on Sioux Falls, SD, flooding city streets, according to press reports. In addition, up to 150 mm drenched southeastern South Dakota and northwestern Iowa within 24 hours, generating scattered flash flooding. Farther south, more than 190 mm inundated portions of west-central Texas in under three hours, with 127 mm falling on one location in just 50 minutes, according to press reports. Six-week rainfall surpluses approached 180 mm in some locations [14 weeks].

5. Brazil:

SCATTERED SHOWERS PROVIDE LIMITED RELIEF.

As much as 220 mm of rain soaked the coast of Brazil, but little or none was reported across the interior. Six-week moisture deficits reached 210 mm in eastern Brazil [13 weeks].

6. Northern Europe:

WARM AND DRY WEATHER CONTINUES.

Moderate rains of 30 to 60 mm dampened parts of Germany, but farther north and east amounts were generally below 40 mm [6 weeks]. The dryness was aggravated by unusually high temperatures, with weekly departures approaching +9°C in portions of Norway and northern Russia (see front cover) [6 weeks].

7. Middle East and Northeastern Africa:

WET CONDITIONS SPREAD SOUTH.

Up to 50 mm of rain dampened the typically dry Middle East, creating six-week precipitation surpluses of up to 130 mm in Saudi Arabia. In addition, temperatures averaged 4°C to 6°C below normal across the eastern Mediterranean last week. Farther south, above normal rainfall (50 to 90 mm) continued across much of Ethiopia and northern Kenya (see page 2) [9 weeks].

8. South-Central Asia:

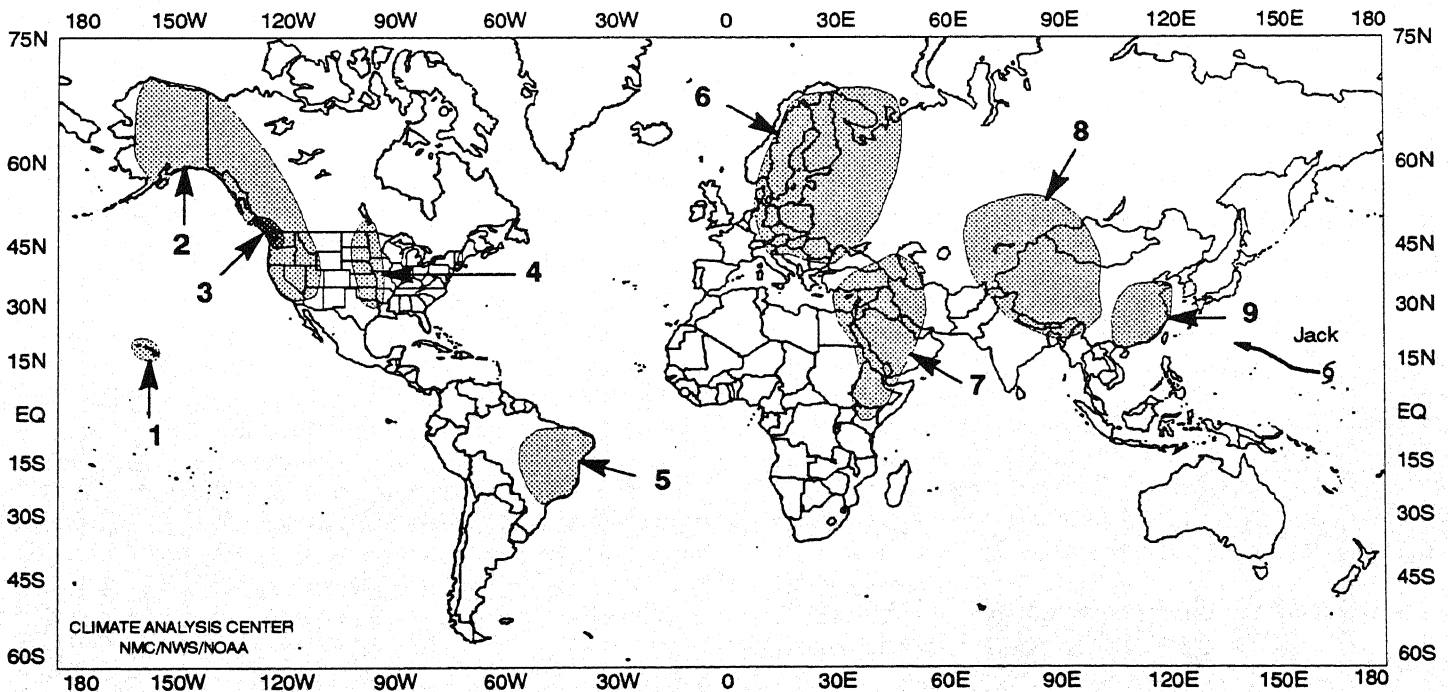
STILL UNUSUALLY COOL AND WET.

Up to 70 mm of rain dampened Tajikistan, Turkmenistan, Kyrgyzstan, and extreme eastern India as six-week precipitation surpluses approached 400 mm in the latter region [9 weeks]. Temperatures departures of -4°C to -6°C were common across the region [9 weeks].

9. Eastern China:

TORRENTIAL RAINS AGAIN DRENCH REGION.

Strong thunderstorms inundated the region with as much as 270 mm of rain as six-week precipitation excesses reached 310 mm [6 weeks].

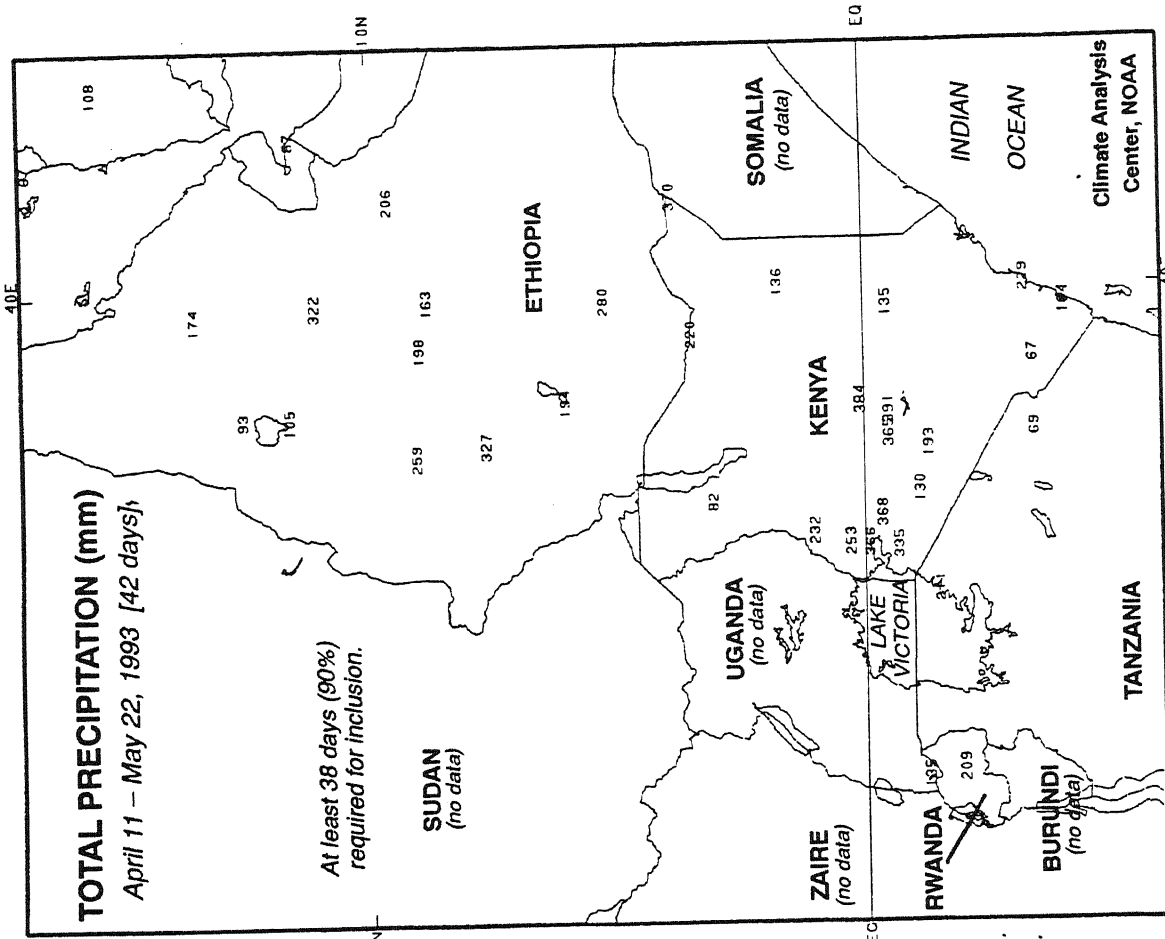
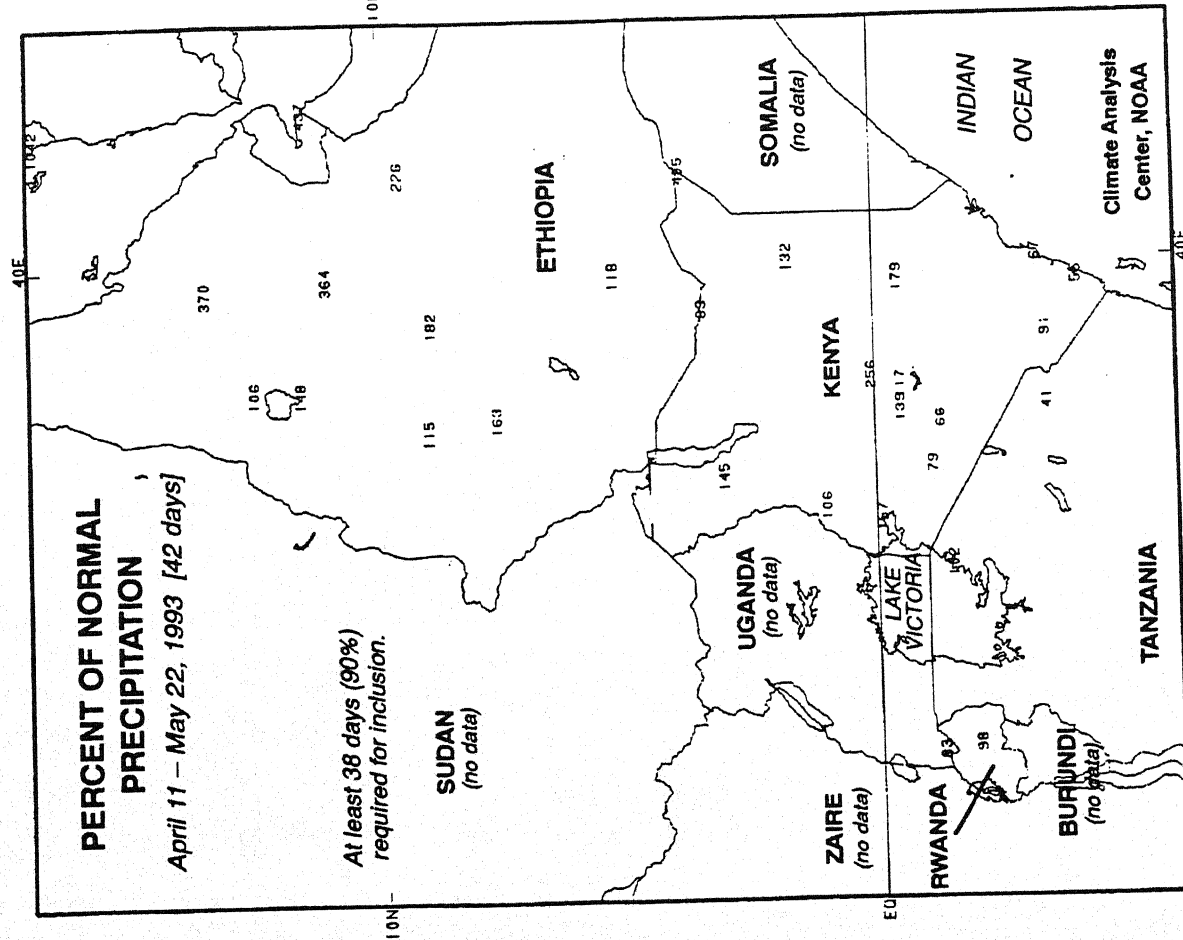


EXPLANATION

TEXT: Approximate duration of anomalies is in brackets. Precipitation amounts and temperature departures are this week's values.

MAP: Approximate locations of major anomalies and episodic events are shown. See other maps in this Bulletin for current two week temperature anomalies, four week precipitation anomalies, long-term anomalies, and other details.

GLOBAL CLIMATE HIGHLIGHTS FEATURE



VERY WET WEATHER DOMINATES EAST-CENTRAL AND NORTHEASTERN AFRICA. Although reliable data are lacking across these areas, the excessively wet conditions observed through the Arabian Peninsula have recently extended southward across Ethiopia and much of Kenya (due to the lack of surface data in Somalia, Uganda, and the Sudan, it is difficult to determine the east-west extent of this anomaly). Since April 11, some southwestern sections of the Arabian Peninsula have received more than ten times the normal rainfall, with 225%–440% of normal drenching northern and eastern Ethiopia, Djibouti, and extreme northeastern Kenya. Farther south, near equatorial Kenya where rainfall is typically heavier, moisture surpluses of 55–235 mm have accumulated during the period. According to press reports, periodic flooding has afflicted portions of Kenya as a result of the recent wetness.

UNITED STATES WEEKLY CLIMATE HIGHLIGHTS

FOR THE WEEK OF MAY 16 – 22, 1993

As the week began, a cold front was draped from western New England southeastward into the mid-Atlantic, then southwestward through the south-central Appalachians, Tennessee and northern lower Mississippi Valleys, and southern Plains. Farther west, the front continued northward from the southeastern Rockies to north-central Montana. Most of the nation's significant precipitation fell in conjunction with this elongated front as the eastern portions meandered through the mid-Atlantic and Southeast while the western portion remained stationary along the eastern Rockies and western High Plains until late in the week.

Showers and thunderstorms, some with locally heavy rains, formed in conjunction with the eastern and southern portions of the front through the mid-Atlantic, Southeast, lower Mississippi Valley, and central and southern Plains early in the week, bringing damaging winds and large hail to portions of Texas, Tennessee, Arkansas, Oklahoma, and Kansas. Along the East Coast, thunderstorms spawned two tornadoes over North Carolina Wednesday, causing minor damage, while a rare twister west of the Rockies was reported near Prescott, AZ on Sunday.

Before the cold front cleared the eastern seaboard, a northward rush of warm, humid air established a new daily record high of 82°F at JFK Airport in New York City on Sunday. Farther west, the stationary front along the eastern Rockies became the focus for repeated afternoon thunderstorm activity. Locally heavy rains combined with water from a quickly-melting Rockies snowpack to generate flash floods, rock and mud slides, and serious river flooding across Colorado, Wyoming, Montana, Idaho, and Utah through most of the week. Flooding along Colorado's Gunnison River caused over \$100,000 damage in Rifle, CO, according to press reports. Numerous rivers and creek remained at or above flood stage as the week ended. Isolated incidents of severe weather were also reported with these thunderstorms. Powerful winds destroyed a fire station in Clinton, MT. Farther north, severe flooding was also reported along the Yukon, Kobuk, and Buchland Rivers in Alaska due to ice jams resulting from the recent spell of mild weather. More than two feet of water flooded some villages, leaving many areas accessible only by boat, according to press reports.

In the nation's mid-section, a cool high pressure center slowly settled from the northern Great Plains and south-central Canada early in the week to the Gulf Coast and Southeast on Saturday. A few record lows were established across the central Plains, Midwest, and Ohio Valley through Thursday, with subfreezing readings stretching across the northern Plains and Great Lakes. As the week progressed and the cool air drifted southeastward, over a dozen new record lows were set across the Southeast, lower Mississippi Valley, and Gulf Coast on both Friday and Saturday, including 48°F at Mobile, AL. Lows in the thirties reached southward into western North Carolina and eastern Tennessee, frost whitened the valleys of western Pennsylvania, West Virginia, and western Virginia, and light snow was reported above elevations of 5,000 feet in the mountains of North Carolina.

During the last two days of the week, the Rockies' front finally began to trek eastward, bringing showers and thunderstorms into the Plains as the week ended. Locally heavy rains generated flash flooding at numerous locations. Nearly five inches of rain deluged Colorado City, CO in 50 minutes while totals of three to five inches soaked Gonzales City, TX, parts of Wilson and Atascosa Counties

in Texas, and portions of central Oklahoma. Farther north, street flooding and flooding along the Big Sioux River was observed near Sioux Falls, SD and in northwestern Iowa as up to six inches of rain fell in a few hours. Golfball-size hail pelted parts of western Texas and southwestern Nebraska, and tornadoes touched down near Burlington, CO and in western Kansas. The recent spell of wetness has left wheat development and corn planting behind schedule through most of the Plains, particularly in Kansas, according to press reports.

Conditions were rather tranquil in the Far West as a warm high pressure ridge dominated most of the week. A weak upper-level disturbances tracked through the region, generating isolated showers and thunderstorms in the Pacific Northwest, northern Inter-mountain West, and Great Basin around mid-week. A relatively dry week was again observed across Florida, although an isolated thundershower dropped approximately 2.5 inches of rain in half an hour near Miami on Monday. Since mid-April, many locations on the Florida Peninsula have received only 1/4 to 2/3 of an inch of rain (roughly 5%–25% of normal), generating moisture deficits as high as 5 1/2 inches.

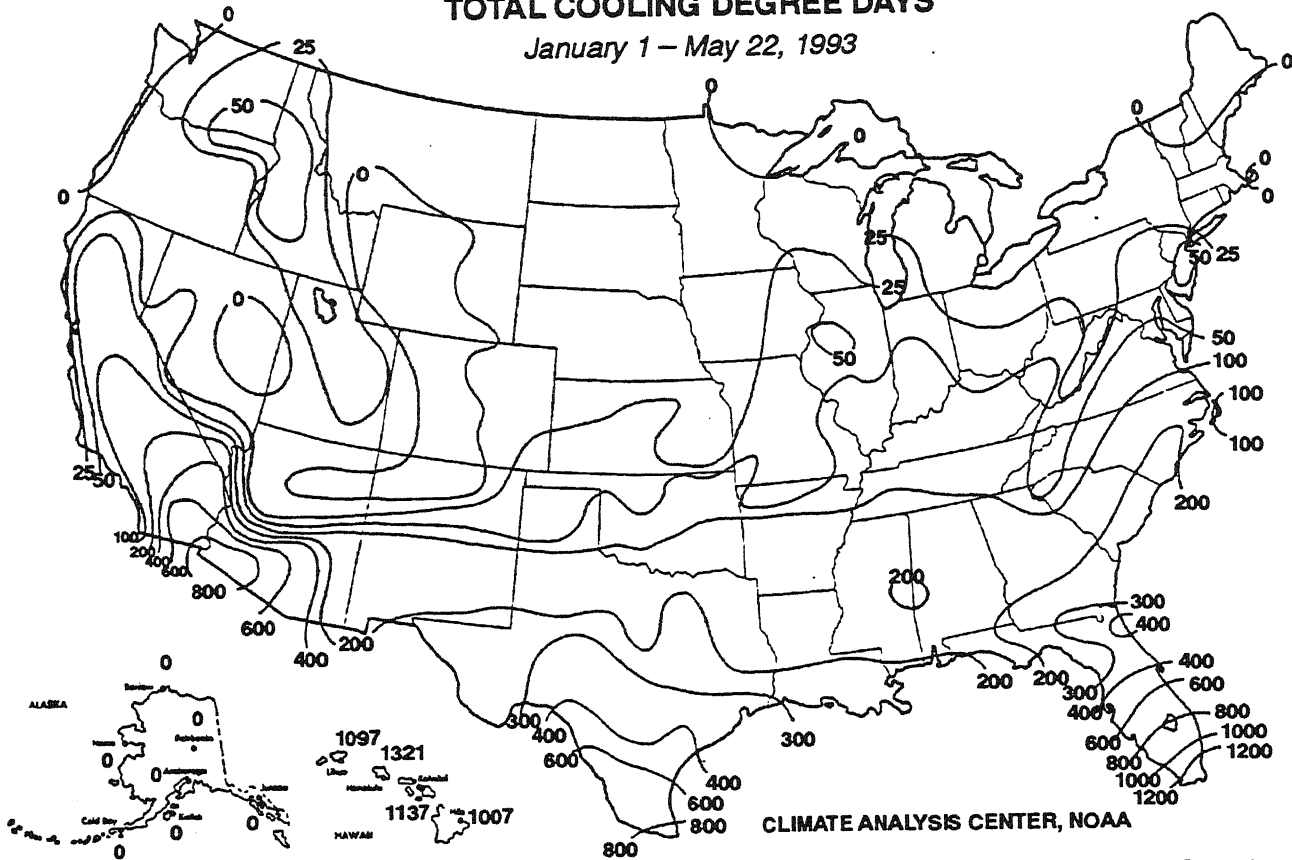
According to the River Forecast Centers, between two and six inches of rain fell on southeastern Kansas and adjacent Oklahoma and Missouri, parts of the central and southern Appalachians, portions of central and southern Texas, central Virginia, southeastern Maryland, north-central North Carolina, parts of the middle and lower Missouri valley, and portions of the western lower Mississippi Valley. In addition, up to 4 1/2 inches of precipitation was recorded in south-central Alaska. Moderate rains fell on the central and northern Pacific Coast, much of the Rockies, the central High Plains, the northern Plains, the western Great Lakes, and the northern mid-Atlantic and Northeast. Little or no precipitation was reported across the upper Mississippi Valley, upstate New York, most of the Ohio Valley, most of Florida and southern Georgia, the Southwest, central and southern California, and the remainder of Alaska. In Hawaii, nearly three inches of rain soaked Hilo on the Big Island, but only 0.07 to 0.15 inches were recorded elsewhere, leaving deficits of seven inches to nearly two feet throughout the state since the beginning of the year.

Very mild air again covered most of Alaska, with most locations reporting weekly average temperatures 6°F to 8°F above normal. Readings soared up to 75°F at Anchorage and to 82°F at Fairbanks. Since February 7, a prolonged warm spell has been observed across the state and in northwestern Canada, with departures for the 3 1/2 month period of +12°F at Bethel, AK, +11°F at King Salmon, AK, and +9°F at Fairbanks, AK, and Inuvik, Canada. Across the contiguous 48 states, abnormally warm conditions covered the U.S. west of the Rockies, a few locations along the North Atlantic Coast, and southern Florida. Weekly departures of +7°F to +10°F were measured from northern sections of Utah and Nevada northward to the Canadian border.

In sharp contrast, below normal temperatures were recorded in most areas from the High Plains eastward to the Atlantic Coast. Readings were 5°F to 10°F below normal from southern New England southward along the Piedmont and Appalachians to north-eastern Alabama and westward through the Midwest, Great Lakes, Mississippi Valley, and eastern half of the Great Plains.

TOTAL COOLING DEGREE DAYS

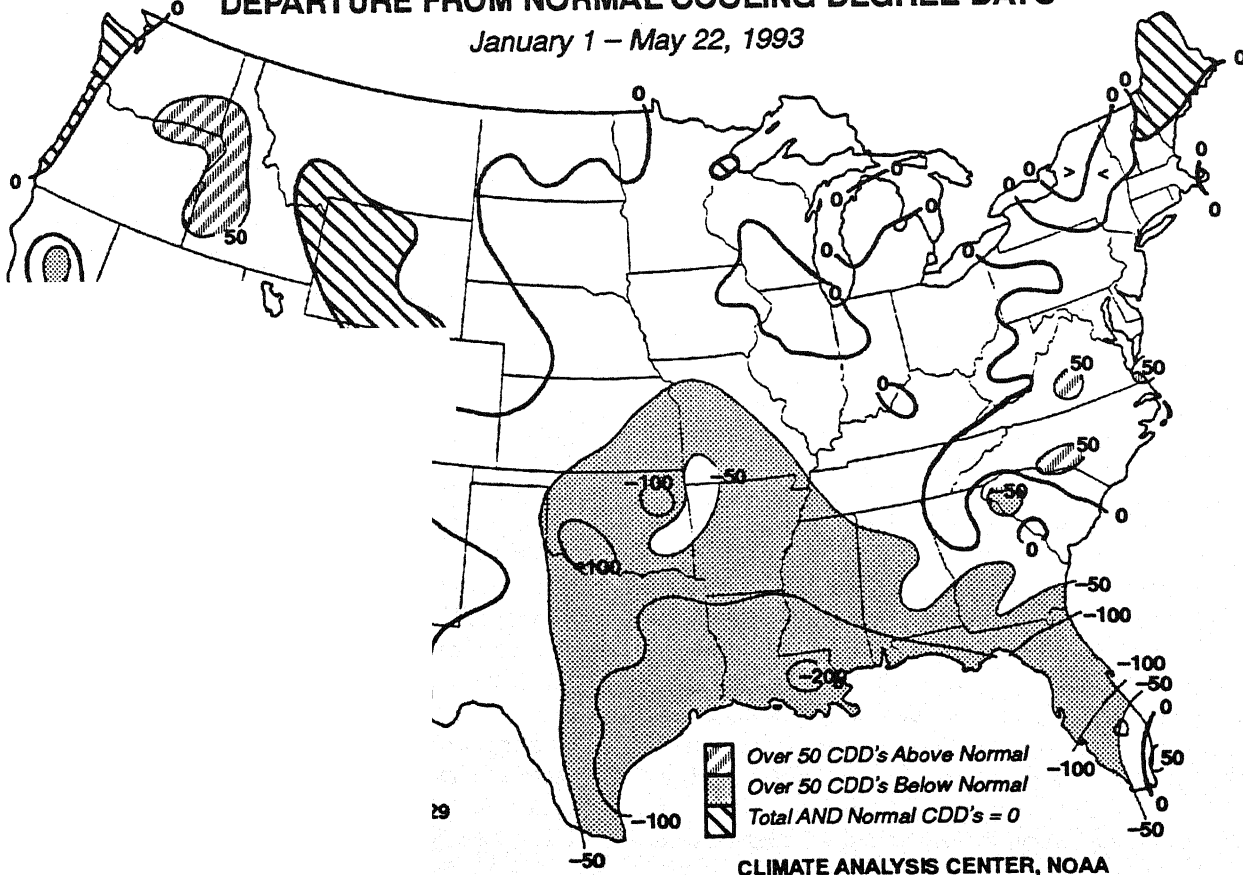
January 1 – May 22, 1993



So far this cooling season, fewer than 25 CDD's have accumulated across the Northeast, the northern and central Appalachians, the Great Lakes, the central and northern Plains, most of the Rockies, the Great Basin, and the Pacific Northwest. In sharp contrast, heavy cooling usage (>1000 CDD's) has been evident across southern Florida (top). Most locations from the south-central Plains eastward across portions of the lower Mississippi Valley and Gulf Coast have recorded abnormally light cooling demand (at least 50 CDD's below normal), with significantly above normal demand restricted to the northern Intermountain West, the desert Southwest, and scattered sections of the mid-Atlantic (bottom).

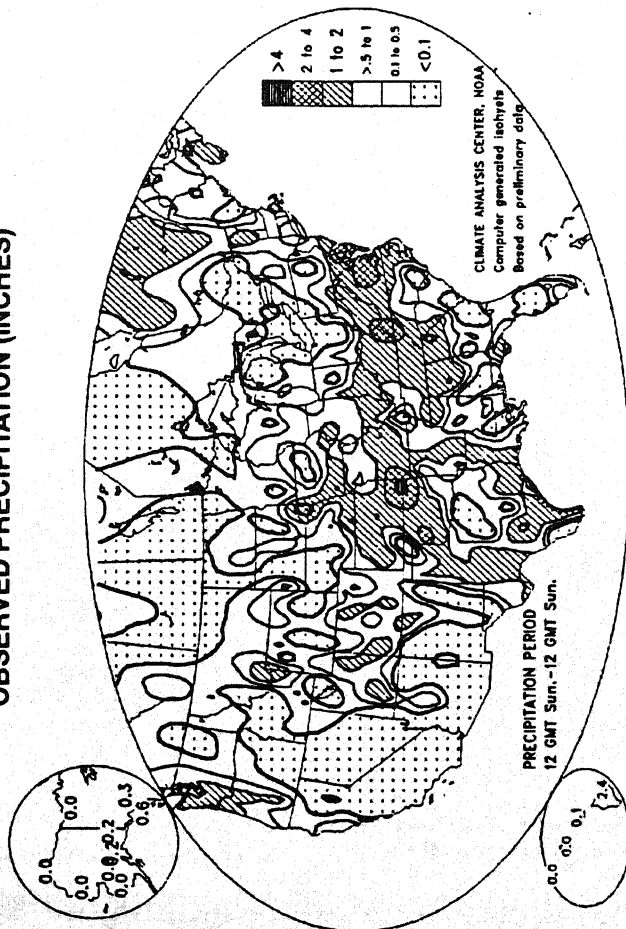
DEPARTURE FROM NORMAL COOLING DEGREE DAYS

January 1 – May 22, 1993

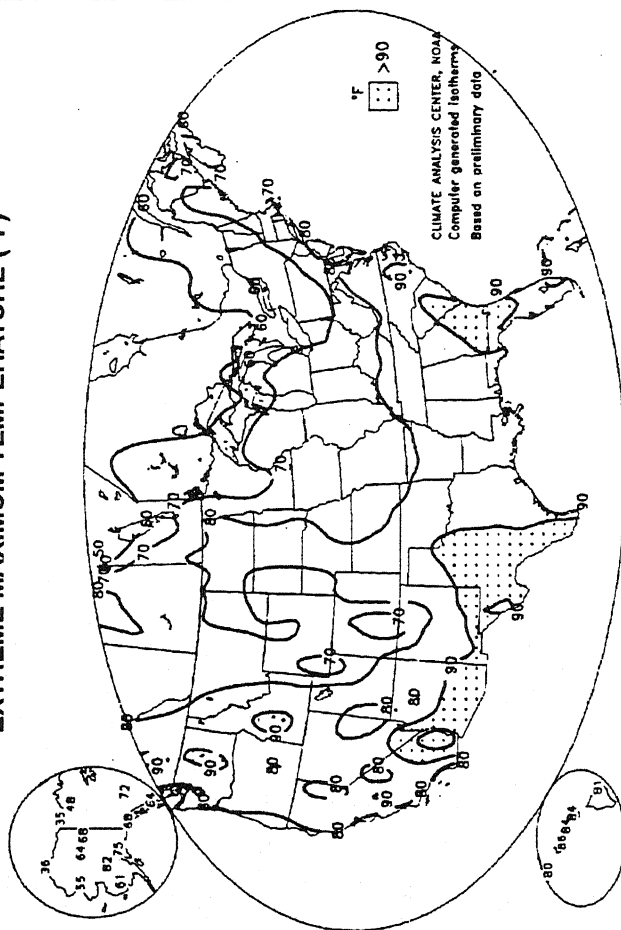


UNITED STATES WEEKLY CLIMATE CONDITIONS (May 16 – 22, 1993)

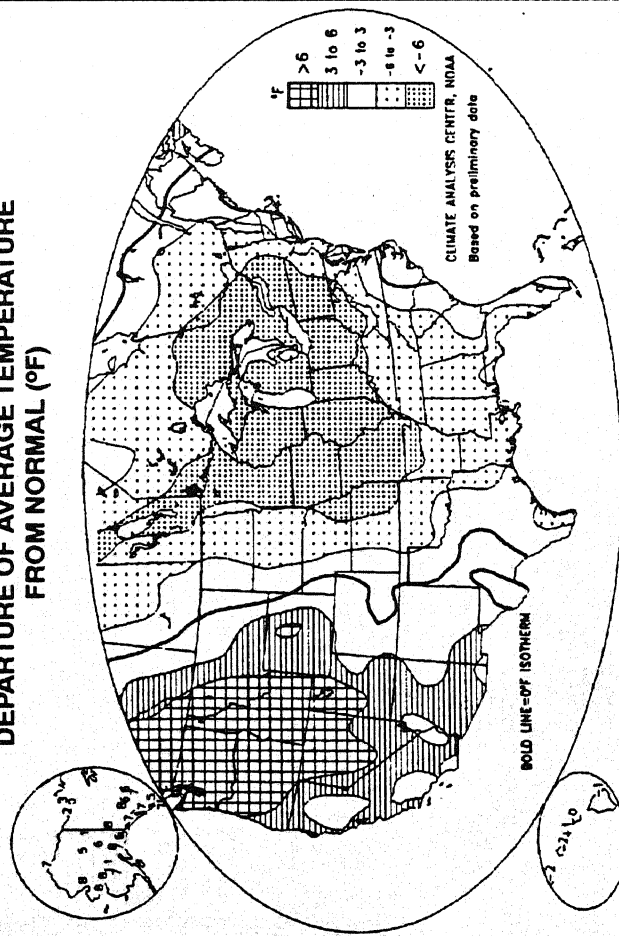
OBSERVED PRECIPITATION (INCHES)



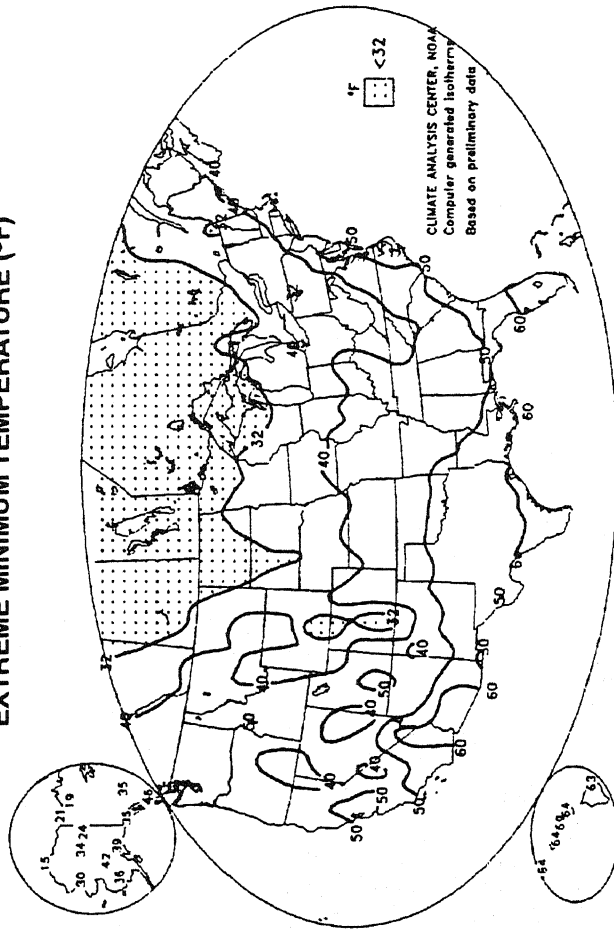
EXTREME MAXIMUM TEMPERATURE (°F)



DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)

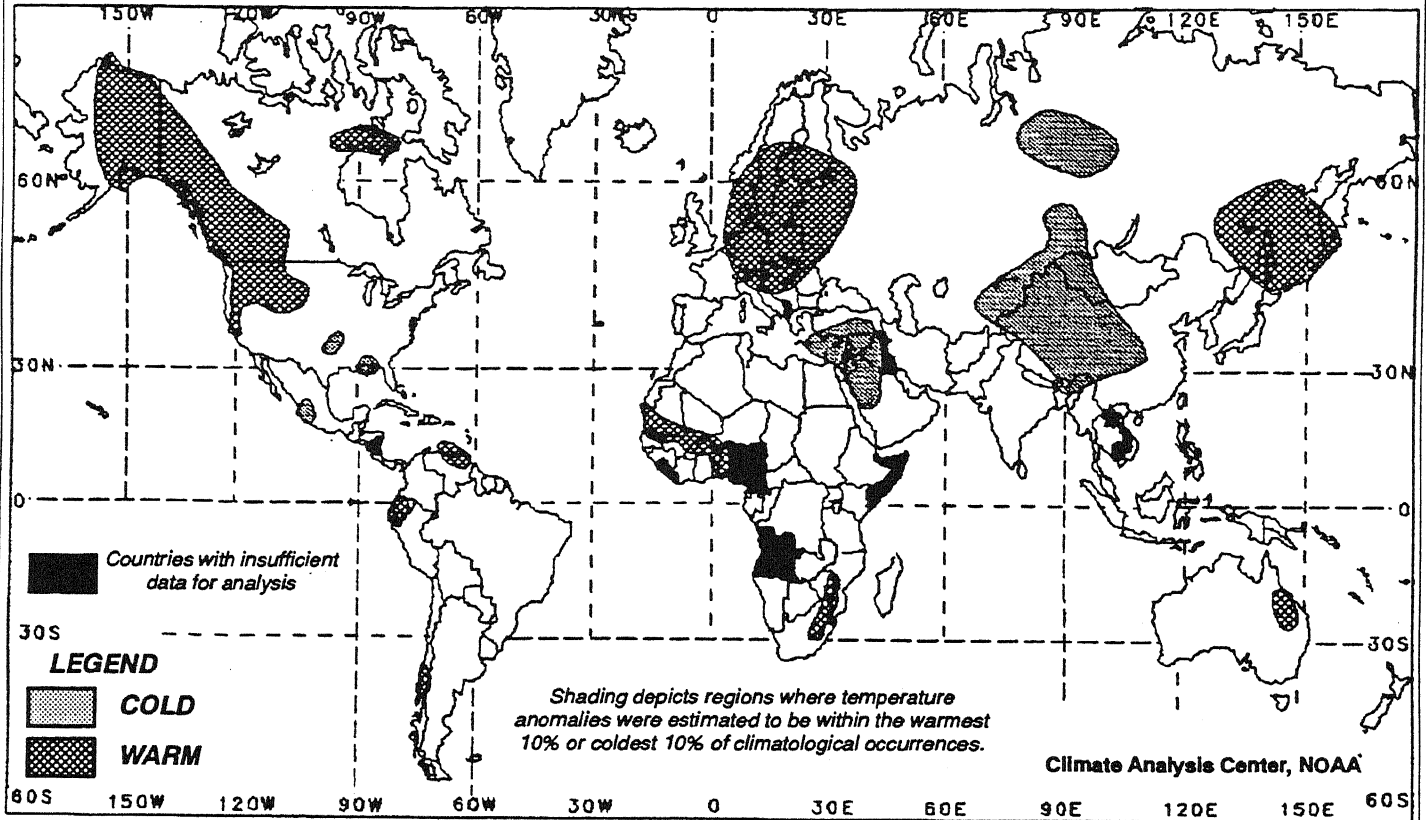


EXTREME MINIMUM TEMPERATURE (°F)



TWO-WEEK GLOBAL TEMPERATURE ANOMALIES

MAY 9 – 22, 1993



FOUR-WEEK GLOBAL PRECIPITATION ANOMALIES

APRIL 25 – MAY 22, 1993

